# REMARKS

## INTRODUCTION

This Response is to the Official Action mailed April 19, 2006 which rejected all of the claims then pending (1-21) under 35 U. S. C. 103(a). The rejection relies upon a combination of United States Patents. The primary reference is Eick No. 5,835,085 assigned to Lucent Technologies). The secondary reference is Jordan No. 5,745,113 (assigned to Bell Atlantic inter alia).

Claims 1-4, 10-11 and 13-21 have been cancelled.. This has been done without prejudice: the cancellation of those claims in no way is an admission that they were not patentable. Instead, after review, it was concluded that the cancelled claims were redundant and overlapping. Also, the wording of certain of those claims was considered to be unnecessarily long.

Thus, the cancellation has been made to simplify the issues and in order to clarify the differences over the art.

In addition, retained claims 5-9 and 12, were carefully analyzed to ensure patentability and clarity and, as indicated, appropriate amendments have been made.

This Application is a continuation of United States Patent Application ser. No. 09/726,884 filed 11/30/2000 (the Parent). Because the disclosures of the Parent and this continuation are the same, in order to save time and money, Applicant has decided to add to this Application new claims 22-30, derived from claims in the Parent Application, and expressly abandon the Parent Application in favor of the present Application. This, of course, is also without prejudice.

THE LAW

Under 35 U.S.C. § 103, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). As stated in M.P.E.P. § 2143.01, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 984, 180 U.S.P.Q. 580 (CCPA 1974). MPEP § 2143 reinforces this principle: "[T]he prior art reference (or references when combined) must teach or suggest all the claim limitations." "Because XXX fails to disclose YYY, the rejections of independent claims ZZZ **and all claims dependent thereon** are improper and must be withdrawn." In re Royka, 490 F.2d 981, 984, 180 U.S.P.Q. 580 (CCPA 1974).

THE REJECTION UNDER 35 U. S. C. 103(a).

Applicants respectfully submit that the Examiner has not met the burden of proof in establishing the obviousness of the rejected claims or the claims now pending in this Application.

Before discussing the claim rejections in detail, it is helpful to examine the general subject matters of the present invention and the cited references.

Applicants' invention, as recited in independent claims 5, 22, 29 and 30, is directed to a system and method for:

- interactive visual analysis of interactions among multiple entities. The entities are individuals or groups of individuals.
- According to embodiments of the present invention, interaction data among three or more entities may be collected in a number of ways (e.g., network surveys, e-mail traffic, telephone traffic and access to shared resources).
- The collected interaction data is calculated using connectivity and diversity measures in order to assess how well the entities are connected to

their environments and to assess how diverse the entities are in their interactions with or connections to their environments.

- An environment for each entity typically comprises one or more other entities.
- The processed interaction data and/or appropriate raw data is displayed to facilitate interaction analyses.
- In addition, either the connectivity measure or the diversity measure or both preferably may be a recursive mathematical algorithm that employs a decay factor to account for the effects of indirect interactions among entities.

EICK FAILS TO DISCLOSE OR SUGGEST THE CLAIMED INVENTION

In connection with prior claims 1-21, the Official Action relied upon Eick as the primary reference. However, Eick does not disclose or suggest generating graphic displays of the interactions between humans who are members of an organization.

Instead, Eick relates to generating graphic displays of "nodes" and "links" which are derived from data from unknown persons—who surely are not members of the same organization. The data is converted into computerized displays of telephone traffic of a huge volume between large numbers of obviously unrelated persons. The system was designed for use in connection with AT&T's telephone system to reduce the "clutter' of prior systems for that company's switching centers. (Col. 1, lines 16-col. 2, line53).

In the Official Action at page 2, it is asserted that "Eick discloses a method for graphically representing interactions between units within an organization…". With respect, the underlined portion is completely incorrect, especially as it implies the "units' are persons belong to an organization. Indeed, at page 3 of the Official Action , it is conceded that "Eick teaches each unit being a phone number which implies persons, however Eick **fails to distinctly point out the units of an organization being individual persons".**

In short, Eick represents completely different art (computerized monitoring large volumes of data traffic) and fails to suggest, let alone teach, that it is important and highly useful to design a system which enables the visual display of the degree to which humans in an organization communicate with each other and, if desired, with persons outside the organization.

Nor does Eick suggest or disclose that the graphical display of humans in such a system can be generated by the use of an algorithm which involves a decay factor. In this regard, at page 3 of the Official Action , the Examiner asserts Eick can vary the "graphical properties of said objects to correspond to the connectivity measure and the diversity measure (Column 4 lines 29-36)." However, nothing in the cited passage at Column 4 of Eick mentions or suggests a "connectivity measure" or a "diversity measure". All Eick tells us is that "Statistics about the telephone numbers determine the color and size of the nodes 305; statistics about the telephone calls determine the color and width of the links 307."

Accordingly, Eick simply does not disclose "the connectivity measure and the diversity measure" of the present invention, contrary to the Examiner's assertion. Indeed, Eick at the cited passage at Column 4 merely mentions "statistics". That could mean practically anything. Actually, Eick does tell us about .his "statistics" in a long and complex passage beginning at Column 5, line 62 and continuing to Column 8, line 14. Nothing in that lengthy part of Eick suggests or discloses either a connectivity measure or a diversity measure as defined by the present Application and claims.

Indeed, Eick fails to tell how his "statistics" are determined. The most he discloses, in Applicants' opinion, can be found at Column 7, lines 54-57 which states "the color 415, height 417, and width 419 may all be derived from statistics relating to the entity represented by node 305." (305 is a telephone number: see Eick's Figure 3.) Again, how are the "statistics" in Eick "derived"?

JORDAN FAILS TO DISCLOSE OR SUGGEST THE CLAIMED INVENTION

At page 3 of the Official Action, having conceded Eick does not relate to graphical display of "individual persons", it is asserted that "Jordan teaches an organizational hierarchy made of individual persons," citing Jordan at Column 1, lines13-21.

However, Jordan is totally unrelated to this art and contains no teaching or suggestion to support the Examiner's contention that it would have been obvious "to combine the method of Eick with the current [?] teaching of Jordan. Motivation to do so would have been to help designers to find patterns in relationships and work practices."

The relevance of Jordan to Eick --or the present invention--is not understood, nor is the asserted "motivation." If one reads the entire initial passage from Jordan Column 1, lines 4-24, it is clear how non-relevant and completely vague Jordan is:

> "This invention relates to computer programs for collecting and representing data about human environments and activities, and in particular about work practices.
>
> "Collecting information in the field in the study of practices and sites of human activity has traditionally involved using one or more of the following technologies: the direct recording of data, such as by video or audio tape, and the recording of notes, such as by audio recording. written text, and notations on maps and forms. Generally, a large amount of highly varied kinds of information needs to be gathered and then considered. The kinds of information may include information about the physical space; about the people's hierarchical or formal relationships (in the case of a business, for example); about the people's informal relationships; about people's social relationships; about people's family relationships; about people's communications with each other; about how activities take place; about how equipment. resources, and artifacts are used; about when and how people interact; about where people and things are located; about when and how people and things move from place to place; about responsibility

of tasks: and so on." (Lines 1- 24. Portion cited in Official Action underlined.)

SUMMARY AS TO EICK AND JORDAN

Independent claims 5, 22, 29 and 30 all contain inventive features not disclosed or suggested by either of the cited patents, including:

A. Graphical display methods and systems for organizations of three or more persons
B. Determining connectivity for such persons using a connectivity measurement;
C. Determining diversity for such persons using a connectivity measurement;
D. Using a recursive mathematical formula to determine the connectivity and diversity;
E. Where the formula includes a decay factor;
F. Varying the physical properties of the displayed objects in accordance with the connectivity and display factors.

Additionally, taken with their Parent claims, dependent claims 6-9, 12 and 23-28 each contain inventive features not disclosed or suggested by either of the cited patents, including:

A. Displaying interactions among such persons objects in accordance with the connectivity and display factors. [claim 6]
B. Providing user selection of graphical objects. [Claims 7 and 8]
C. Displaying direct and indirect interactions among the persons at a preselected level. [Claim 9]

D. Displaying direct and indirect interactions among the persons at a level determined by the user. [Claim 12]
E. Employing specified algorithms to determine the connectivity and diversity measures. [Claims 23 and 24]
F. Using one or more data sources to determine interactions.[Claim 25]
G. Generating an organizational view of the interactions among entities. [claim 26]
H. Displaying selected types of views. [Claim 27]
I. Generating an interaction report based on the results of an interaction analysis. [Claim 28]

THE REFERENCES CITED IN THE PARENT APPLICATION FAIL TO DISCLOSE OR SUGGEST THE CLAIMED INVENTION

In the Parent Application, Ser. No. 09/726,884, a final Office Action was mailed 4/19/06. Although, as of the filing of this Response, the Parent is being expressly abandoned without prejudice in favor of prosecuting this Application for the reasons described above, in compliance with all applicable law and PTO Rules, Applicants wish to clearly bring to the Examiner's attention to that rejection and to the references cited therein. The Office Action rejected all claims then pending, 1-18, under 35 U. S. C. 103(a). The Examiner is urged to review that Office Action and the references cited in order that the present Application be given the closest possible scrutiny.

All of the pending 18 claims of the Parent have not been carried over to this Application. Instead claims 22-30 have been added by the present amendment in this Application. These claims contain certain features. which were, to one degree or another, presented in some of the 18 claims pending in the Parent Application as of the final rejection.

The newly presented claims 22-30 have been carefully crafted to highlight the non-obvious differences between the inventions defined therein and the references cited in the final rejection and the patents cited by the Examiner in the Office Action in this Application.

In view of the carefully selected terms thereof, Applicants sincerely believe that new claims 22-30 herein are patentable over both the art presented in the final rejection as well as over Eick and Jordan, as outlined above.

In the Office Action in the Parent Application claims 1-18 of the Parent were rejected under 35 U. S. C. 103(a) over Johnson U. S. Patent 5,954,839 and Herz U. S. Patent 6,029,195.

The following general remarks are included in order to assist the Examiner in assessing the differences between the present claims and the patents cited in the Office Actions mailed 4/19/06 in this Application as well as in the Parent Application.

- One aspect to be noted is that Applicants' invention is directed to a system and method for interactive visual analysis of interactions among multiple entities. The entities are individuals or groups of individuals.
- According to embodiments of the present invention, interaction data among three or more entities is collected in a number of ways (e.g., network surveys, e-mail traffic, telephone traffic and access to shared resources).
- The collected interaction data is processed with connectivity and diversity measures in order to assess how well the entities are connected to their environments and to assess how diverse the entities are in their interactions with or connections to their environments.
- An environment for each entity typically comprise one or more other entities.
- The processed interaction data and/or appropriate raw data is displayed to facilitate interaction analyses.

- In addition, either the connectivity measure or the diversity measure or both preferably is a recursive mathematical algorithm that employs a decay factor to account for the effects of indirect interactions among entities.

With respect to the patents cited in the Parent Application as bases for a rejection of the 18 claims then pending under 35 U. S. C. 103(a), the following distinctions are included as they are useful in distinguishing the present claims.

Thus, Johnson discloses a system and method for the monitoring and collection of all inbound/outbound information activity and communications activity at a particular user location. The real-time interaction between a user and an external information service is monitored and specific data are collected regarding that real-time interaction. For example, when a user is connected to a commercial information service (e.g., CompuServe or Prodigy) connectivity data (e.g., date/time of interactive session, number of packets sent/received, application file name) are collected. In addition, other substantive data (e.g., type of service, type and number of inquiries made, etc.) regarding the real-time interaction are collected. The information is collected in real-time, on an operation-by-operation basis, and is ultimately aggregated, for example, at the household level in a central location within the household. The aggregated data is thereafter transmitted to a central server for data analysis purposes. The information service provider can customize certain offerings based upon data collected from the user base.

Herz discloses a system for customized electronic identification of desirable objects, such as news articles, in an electronic media environment. A Herz system can automatically construct both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the

user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media.

The cited references applied to reject claims 1-18 in the Office Action of 4/19/06 in the Parent Application (i.e., Johnson and Herz), individually or in combination, do not teach or suggest all the claimed elements in the present application.

First, the cited references do not disclose interaction data among three or more entities, wherein each entity is an individual or a group of individuals, and wherein at least two entities directly interact with multiple entities.

Any two of the "three or more entities" might interact with each other and the aggregate effect may be a complex "web" of interactions.

In contrast, Johnson fails to teach or suggest representing interaction data among three or more entities, and wherein at least two entities directly interact with multiple entities because Johnson is also limited to two-way interactions, namely, between an information service and its users. In addition, the interacting entities in Johnson are computers rather than individuals or groups of individuals as claimed in the present application.

One point that should be helpful in a careful examination of this Application is the difference between what might be termed "data network connectivity" (as in Johnson) with the "entity-environment connectivity" in the present invention. As is clear in the present claims, an "environment" of each entity comprises at least one entity. Therefore, the "connectivity," as claimed in the present application, pertains to interactions among entities (i.e., individuals or groups). For example, a connectivity may measure how close an individual is connected with his or her colleagues and/or client contacts. In contrast, the connectivity data (e.g., date/time of interactive session, number of packets sent/received, application file name) that Johnson monitors are related to computer-to-computer interaction, such as a network connection between a household computer and a service provider's server. Johnson, Figure 1, and col. 3, lines 10-11. Since Johnson only discloses data connectivity in the telecommunications context, it cannot render obvious the connectivity measure in human interactions context.

Herz does not deal with interactions among multiple entities at all.

Second, neither Johnson nor Herz disclose processing the interaction data with connectivity and diversity measures. As recited in the claims , "connectivity" is a measure for assessing how well said entities are connected to their environments, and "diversity" is a measure for assessing how diverse said entities are in their interactions with or connections to their environments.

At page 5 of the Office Action of 4/19/06 in the Parent Application, the Examiner concede that Johnson "fails to disclose" such connectivity and diversity measure, but asserts Herz discloses "connectivity/diversity measure is a recursive mathematical algorithm that employs a decay factor to account for the effects of indirect interactions among entities, Col. 60, lines 49-52)."

However, Herz is non-analogous art: the patent is devoted to searching techniques using stored "target profiles" for individuals so that they may more efficiently search for material of pre-set (targeted) interest to them. See, e. g., col. 6, lines 16-58.

However, Herz does not disclose, teach or suggest the use of either a connectivity or diversity measure at all, and certainly not as part of a method and system for generating graphical depictions of interactions among multiple users.

As to the passage at Column 60 of Herz, it relates solely to the deletion of old files from a server. Herz's server deletes files using a decay factor, but that factor is used to "reflect the fact that files are accessed less as they age. He suggests a decay factor of 0.95 for each file that is stored by the server. (Col. 60, lines 38-53.) Indeed, it was admitted in a prior Final Office Action in the Parent Application that Herz's decay factor is used for the purpose of calculating how much files are accessed instead of accounting for indirect interactions among entities. Thus, despite use of the same phrase "decay factor," Herz has little, if anything, in common with the present invention.

In addition to the obvious point that Herz is from a completely non-analogous art which one skilled in the art would not go to per any suggestion in Johnson, the decay factor of Herz is not a recursive mathematical algorithm and is employed for file deletion. This has nothing to do with the decay factor of the present claims which factor is

employed in the process of generating graphical objects to illustrate the connectivity and diversity of multiple entities and persons.

However, the Examiner repeatedly cites Herz in the 4/19/06 Office Action as allegedly disclosing the decay factor. For the reasons described, this is simply a misunderstanding of Herz, at best. In any event, it is incorrect.

For example, Herz at Column 8, lines 39-47 is also cited at page 6 in the Office Action in the Parent Application. However, review of that passage in Herz does not disclose its relevance to the present claims. In this regard, the assertion made that Herz discloses "connectivity and diversity measures" is unfounded. .Similarly, at page 7 of that Office Action, Column 94, lines 20-28 of Herz is cited.. That passage relates to a supervisor monitoring employee communications and reporting employee activity. Again, however, this has nothing to do with the technology of generating graphical representations of anything. The Office Action continues at some length to attempt to pick up pieces of Herz (and of Johnson) in regard to the other claims then pending. Suffice it to say that, with respect, such citations are unfortunately incorrect and misconstructions of those references.

In sum, certain of the present claims recite "a decay factor to account for the effects of indirect interactions among entities". This feature cannot be found in any in the cited references in either of the Office Actions in this Application or its Parent.

Finally, as described above, numerous claim elements in the present application are not disclosed in the cited references in either this Application or its Parent. Accordingly, those references cannot render the claim invention obvious.

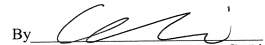
## Conclusion

For at least the reasons provided above, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and allowance of the pending claims are respectfully solicited.

Should there be anything further required to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below before issuance of any further office action.

In the event any additional fees are due, the Commissioner is hereby authorized to charge the undersigned's Deposit Account No. 50-0206.

Respectfully submitted,
HUNTON & WILLIAMS, LLP

By 
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